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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/691,212	DORNBUSCH ET AL.	
	Examiner	Art Unit	
	CHRIS C. CHU	2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 December 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1, 3 - 8, 10 - 21 and 23 - 29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3 - 8, 10 - 21 and 23 - 29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed on December 27, 2007 has been received and entered in the case.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 2 – 8, 10 – 21 and 23 – 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(A) In claim 1, lines 9 – 12, it is not clear what applicant regards as "wherein said first and second terminal pairs are separated by a first predetermined distance sufficient to maintain an input-to-output isolation attenuation therebetween of not less than a first stopband attenuation of the first external filter". Specifically, the limitation "not less than a first stopband attenuation of the first external filter" in the claim is not clear because what is the first stopband attenuation of the first external filter? Applicant should note that stopband attenuation specifies the minimum amount of **attenuation** a filter will exhibit at a designated frequency or range of frequencies, which lie outside the pass band. Since the claim 1 does not specifically claim that neither the specific number of the first stopband attenuation nor the specific number is a positive or negative integer number,

hence any attenuation between negative infinity numbers and positive infinity numbers could read as the first stopband attenuation of the first external filter. Furthermore, applicant should note that infinity numbers of none-integer numbers exist even between -1 and +1. Thus, the metes and bounds of the term "first stopband attenuation" in this claim is unclear because the term "first stopband attenuation" does not particularly point out and distinctly define the metes and bounds of the subject matter that will be protected by the patent grant.

(B) Dependent claims 3 – 7 do not rectify the deficiency of claim 1 and therefore are similarly rejected.

(C) In claim 8, lines 9 – 13, it is not clear what applicant regards as "said third and fourth terminal pairs are separated by a second predetermined distance sufficient to maintain an input-to-output isolation attenuation therebetween of not less than a second stopband attenuation of the second external filter". Specifically, the limitation "not less than a second stopband attenuation of the second external filter" in the claim is not clear because what is the second stopband attenuation of the second external filter? As explained in the previous paragraph, the stopband attenuation specifies the minimum amount of **attenuation** a filter will exhibit at a designated frequency or range of frequencies, which lie outside the pass band. Since the claim 8 does not specifically claim that neither the specific number of the second stopband attenuation nor the specific number is a positive or negative integer number, hence any attenuation between negative infinity numbers to positive infinity numbers could read as the second stopband attenuation of the second external filter. Thus, the metes and bounds of the term "second

stopband attenuation" in this claim is unclear because the term "second stopband attenuation" does not particularly point out and distinctly define the metes and bounds of the subject matter that will be protected by the patent grant.

(D) Dependent claims 10 – 14 do not rectify the deficiency of claims 1 and 8, and therefore are similarly rejected.

(E) In claims 15, 21 and 26, it is not clear what applicant regards as "wherein said first terminal and second terminal are separated by a first predetermined distance sufficient to maintain a first input-to-output isolation attenuation therebetween that is not less than a first stopband attenuation of the first external filter, and wherein said third terminal and said fourth terminal are separated by a second predetermined distance sufficient to maintain a second input-to-output isolation attenuation therebetween that is not less than a second stopband attenuation of the second external filter". Specifically, the limitations "a first predetermined distance … not less than a first stopband attenuation of the first external filter" and "a second predetermined distance … that is not less than a second stopband attenuation of the second external filter" in the claim are not clear because what are the first and second stopband attenuations of the first and second external filters? Furthermore, the terms "first stopband attenuation" and "second stopband attenuation" in the claim are unclear because the terms "first stopband attenuation" and "second stopband attenuation" do not particularly point out and distinctly define the metes and bounds of the subject matter that will be protected by the patent grant.

(F) Dependent claims 16 – 20, 23 – 25 and 27 – 29 do not rectify the deficiency of claims 15, 21 and 26, and therefore are similarly rejected.

On page 8, applicant argues, "the claims have been amended to more specifically recite 'stopband attenuation' in place of 'operational attenuation' in an effort to advance the Present Application to issuance." This argument is not persuasive because the above paragraph still does not provide any specific distances between differential input and output pins of a chip. Furthermore, applicant argues "the stopband attenuation of an external filter is finite and measurable." This argument is partially correct because if applicant claimed the range of the pass band or a designated frequency or range of frequencies of a filter then the stopband attenuation is finite and measurable. However, applicant does not claim any facts or numbers to measure or define a finite number of the stopband attenuation. Thus, the claims are still not definite and the above rejection under the 35 U.S.C. 112, second paragraph, is maintained.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3, 5 – 7, 21 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Hikita et al. (U. S. Pat. No. 6,396,154).

Regarding claim 1, Hikita et al. discloses in e.g., Fig. 1 an integrated circuit (the semiconductor device in Fig. 1; column 3, lines 49 – 53) comprising:

- a semiconductor substrate (the substrate of the chip 2; column 6, lines 23 – 31) having a first pair of bonding pads (P23 and P24; column 4, lines 10 and 11) for conducting a differential output signal thereon (column 4, lines 4 – 20) and configured to be coupled to an input of a first external filter (222; see e.g., Fig. 1 and column 4, lines 10 – 13), and a second pair of bonding pads (P21 and P22) for conducting a differential input signal thereon and configured to be coupled to an output of said first external filter (221; see e.g., Fig. 1 and column 4, lines 10 – 13); and
- an integrated circuit package (1 and 40; see Fig. 2 and column 3, line 54) encapsulating said semiconductor substrate (the substrate of the chip 2) and having first (P13 and P14) and second (P11 and P12) terminal pairs corresponding and coupled to said first and second pairs of bonding pads, respectively (see e.g., Fig. 1),
- wherein said first and second terminal pairs (P11 – P14) are separated by a first predetermined distance (the distance between the elements P11 – P14; see e.g., Fig. 1) sufficient to maintain an input-to-output isolation attenuation therebetween of not less than a first stopband attenuation (as explained in the previous paragraph, the first stopband attenuation could be any number between negative infinity numbers and positive infinity numbers. If we measure a stopband attenuation of any filter at one point that is the lowest value of the stopband attenuation of the filter and measure the input-to-output isolation attenuation at it's highest point, then the value of the input-to-output isolation attenuation is always greater then the lowest value of the stopband

attenuation of any filter. Since Hikita et al. discloses a filter, hence Hikita et al. fully anticipates this limitation) of the first external filter (222).

Furthermore, the following limitation "configured to be coupled to an input of a first external filter … configured to be coupled to an output of said first external filter" is an intended use language that does not structurally or patentably distinguish the claimed invention from the structure as disclosed by Hikita et al. Since the bonding pads of Hikita et al. are capable of performing the intended use, Hikita et al. fully meets this limitation.

Regarding claim 3, Hikita et al. discloses in e.g., Fig. 1 said first (P13 and P14) and second (P11 and P12) terminal pairs being located along a first side of said integrated circuit package (1 and 40) and separated by a first plurality of intervening terminals (the pads 12 that are located between the line of P11 – P12 and the other line of P13 – P14; see e.g., Fig. 1).

Regarding claim 5, the limitation "said first plurality of intervening terminals comprises at least one power supply terminal" is an intended use language that does not structurally or patentably distinguish the claimed invention from the structure as disclosed by Hikita et al. Furthermore, since any one of the first plurality of intervening terminals is capable of performing as a power supply terminal, Hikita et al. fully meets this limitation.

Regarding claim 6, Hikita et al. discloses in e.g., Fig. 1 first (P13) and second (P14) terminals of said first terminal pair (P13 and P14) being "adjacent" to one another (see e.g., Fig. 1), and first (P11) and second (P12) terminals of said second terminal pair (P11 and P12) are "adjacent" to one another (see e.g., Fig. 1).

Regarding claim 7, Hikita et al. discloses in e.g., Fig. 1 said first (P13 and P14) and second (P11 and P12) terminal pairs being located at opposite ends of said first side of said integrated circuit package (1; see e.g., Fig. 1).

Regarding claim 21, Hikita et al. discloses in e.g., Fig. 1 an integrated circuit comprising:

- a semiconductor substrate (the substrate of the chip 2) having a first pair of bonding pads (P23 and P24) conducting a differential output signal thereon (column 4, lines 4 – 20) and configured to be coupled to an input (222) of an external filter (22), and a second pair of bonding pads (P21 and P22) conducting a differential input signal thereon and configured to be coupled to an output (221) of said external filter (22; see e.g., Fig. 1); and
- an integrated circuit package (1 and 40) encapsulating said semiconductor substrate (the substrate of the chip 2) and having at least first and second sides, and comprising a first pair of terminals (P13 and P14) located at a first end of said first side and coupled to said first pair of bonding pads (see e.g., Fig. 1), and a second pair of terminals (P11 and P12) located at a second end of said first side opposite said first end and coupled to said second pair of bonding pads (see e.g., Fig. 1 and column 4, lines 21 – 32),
- wherein said first pair of terminals (P13 and P14) and said second pair of terminals (P11 and P12) are separated by a predetermined distance (the distance between the P11, P12, P13 and P14; see e.g., Fig. 1) sufficient to maintain an input-to-output isolation attenuation therebetween (see e.g., Fig. 1) that not less than a first stopband attenuation (as explained in the previous paragraph, the first stopband attenuation

could be any number between negative infinity numbers to positive infinity numbers. If we measure a stopband attenuation of any filter at one point that is the lowest value of the stopband attenuation of the filter and measure the input-to-output isolation attenuation at it's highest point, then the value of the input-to-output isolation attenuation is always greater then the lowest value of the stopband attenuation of any filter. Since Hikita et al. discloses a filter, hence Hikita et al. fully anticipates this limitation) of the first external filter (222).

Furthermore, the following limitation "configured to be coupled to an input of an external filter … configured to be coupled to an output of said first external filter" is an intended use language that does not structurally or patentably distinguish the claimed invention from the structure as disclosed by Hikita et al. Since the bonding pads of Hikita et al. are capable of performing the intended use, Hikita et al. fully meets this limitation.

Regarding claim 23, Hikita et al. discloses in e.g., Fig. 1 said integrated circuit package further comprises a thin quad flat package (TQFP; since the package of Hikita et al. is a "thin", four sides and flat, the Hikita et al. fully meets this limitation.).

6. Claims 15 – 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Dreifus et al. (U. S. Pat. No. 5,576,589).

Regarding claim 15, Dreifus et al. discloses in e.g., Fig. 2 an integrated circuit comprising:

- a semiconductor substrate (21; column 6, line 38) having first, second, third, and fourth quadrants having respective first, second, third, and fourth bonding pads (26;

see e.g., Fig. 2) located therein (see e.g., Fig. 2), said semiconductor substrate (21) including a first circuit (25, at the right-side) configured to be coupled to a first external filter (24, at the right-side) coupled to said first circuit through said first and second bonding pads (26, at the right-side), and a second circuit (25, at the left-side) configured to be coupled to a second external filter (24, at the left-side) coupled to said second circuit through said third and fourth bonding pads (26, at the left-side); and

- an integrated circuit package (the external integrated circuits device that is attached to the element 21; column 6, lines 33 and 34) encapsulating said semiconductor substrate (21) and having first, second, third, and fourth terminals (the pads on the external integrated circuits device that are attached to the elements 26) corresponding and coupled to said first, second, third, and fourth bonding pads, respectively (see e.g., Fig. 2 and column 6, lines 33 and 34),
- wherein said first terminal and said second terminal (the pads on the external integrated circuits device that are attached to the elements 26) are separated by a first predetermined distance (the distance that is formed between the elements 26) sufficient to maintain a first input-to-output isolation attenuation therebetween that is not less than a first stopband attenuation (as explained in the previous paragraph, the first stopband attenuation could be any number between negative infinity numbers to positive infinity numbers. If we measure a stopband attenuation of any filter at one point that is the lowest value of the stopband attenuation of the filter and measure the input-to-output isolation attenuation at it's highest point, then the value of the input-

to-output isolation attenuation is always greater then the lowest value of the stopband attenuation of any filter. Since Dreifus et al. discloses a filter, hence Dreifus et al. fully anticipates this limitation) of the first external filter (24, at the right-side), and

- wherein said third terminal and said fourth terminal (the pads on the external integrated circuits device that are attached to the elements 26) are separated by a second predetermined distance (the distance that is formed between the elements 26) sufficient to maintain a second input-to-output isolation attenuation therebetween that is not less than a second stopband attenuation (as explained in the previous paragraph, the first stopband attenuation could be any number between negative infinity numbers to positive infinity numbers. If we measure a stopband attenuation of any filter at one point that is the lowest value of the stopband attenuation of the filter and measure the input-to-output isolation attenuation at it's highest point, then the value of the input-to-output isolation attenuation is always greater then the lowest value of the stopband attenuation of any filter. Since Dreifus et al. discloses a filter, hence Dreifus et al. fully anticipates this limitation) of the second external filter (24, at the left-side; see e.g., Fig. 2).

Furthermore, the following limitation "configured to be coupled to a first external filter … configured to be coupled to a second external filter" is an intended use language that does not structurally or patentably distinguish the claimed invention from the structure as disclosed by Dreifus et al. Since the bonding pads of Dreifus et al. are capable of performing the intended use, Dreifus et al. fully meets this limitation.

Regarding claim 16, Dreifus et al. discloses in e.g., Fig. 2 said first and second circuits (25s in the both sides) comprising portions of radio frequency (RF) receivers (column 8, lines 20 – 22).

Regarding claim 17, the limitation "said first circuit comprises a portion of a satellite receiver and said second circuit comprises a portion of a terrestrial receiver" is an intended use language that does not structurally or patentably distinguish the claimed invention from the structure as disclosed by Dreifus et al. Furthermore, since any one of the first and second circuits are capable of performing as a satellite receiver or a terrestrial receiver, Dreifus et al. fully meets this limitation.

Regarding claim 18, Dreifus et al. discloses in e.g., Fig. 2 said first and second circuits (25s in the both sides) having "substantially" the same layout (see e.g., Fig. 2).

Regarding claim 19, Dreifus et al. discloses in e.g., Fig. 2 said first and second circuits (25s in the both sides) being configured to be coupled to first and second external surface acoustic wave (SAW) filters (24; column 6, lines 36 – 46), respectively (see e.g., Fig. 2). Furthermore, the following limitation "configured to be coupled to first and second external surface acoustic wave (SAW) filters" is an intended use language that does not structurally or patentably distinguish the claimed invention from the structure as disclosed by Hikita et al. Since the bonding pads of Hikita et al. are capable of performing the intended use, Hikita et al. fully meets this limitation.

7. Claims 26, 27 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Hazama et al. (U. S. Pat. No. 4,296,391).

Regarding claim 26, Hazama et al. discloses in e.g., Fig. 9B an integrated circuit comprising:

- adjacent first (41; column 9, lines 67 – 68) and second (41') terminals at a first end of a first side of the integrated circuit (20; column 7, line 34) configured to be coupled to a differential input (23 and 26; column 9, line 65) of a first external filter (the VHF filter; column 9, line 66);
- adjacent third (42; column 10, lines 1 and 2) and fourth (42') terminals at a second end of said first side of the integrated circuit (20) configured to be coupled to a differential output (24 and 25; column 9, line 68) of said first external filter (the VHF filter; see e.g., Fig. 9B), wherein said adjacent first (41) and second (41') terminals and said adjacent third (42) and fourth (42') terminals are separated by a first predetermined distance (the distance between the elements 41, 41', 42 and 42') sufficient to maintain an input-to-output isolation attenuation therebetween that not less than a first stopband attenuation (as explained in the previous paragraph, the first stopband attenuation could be any number between negative infinity numbers to positive infinity numbers. If we measure a stopband attenuation of any filter at one point that is the lowest value of the stopband attenuation of the filter and measure the input-to-output isolation attenuation at it's highest point, then the value of the input-to-output isolation attenuation is always greater then the lowest value of the stopband attenuation of any filter. Since Hazama et al. discloses a filter, hence Hazama et al. fully anticipates this limitation) of the first external filter (the VHF filter), and

- adjacent fifth (43; column 10, line 5) and sixth (43') terminals at a first end of a second side of the integrated circuit (20) configured to be coupled to a differential input (29 and 32; column 10, line 2) of a second external filter (the UHF filter; column 10, line 3); and
- adjacent seventh (44; column 10, line 8) and eighth (44') terminals at a second end of said second side of the integrated circuit (20) configured to be coupled to a differential output (30 and 31; column 10, lines 5 and 6) of said second external filter (the UHF filter; see e.g., Fig. 9B). wherein said adjacent fifth (43) and sixth (43') terminals and said adjacent seventh (44) and eighth (44') terminals are separated by a second predetermined distance (the distance between the elements 43, 43', 44 and 44') sufficient to maintain an input-to-output isolation therebetween that is not less than a second stopband attenuation (as explained in the previous paragraph, the first stopband attenuation could be any number between negative infinity numbers to positive infinity numbers. If we measure a stopband attenuation of any filter at one point that is the lowest value of the stopband attenuation of the filter and measure the input-to-output isolation attenuation at it's highest point, then the value of the input-to-output isolation attenuation is always greater then the lowest value of the stopband attenuation of any filter. Since Hazama et al. discloses a filter, hence Hazama et al. fully anticipates this limitation) of the second external filter (the UHF filter; see e.g., Fig. 9B).

Furthermore, the following limitation "configured to be coupled to a differential input of a first external filter … configured to be coupled to a differential output of said first external

filter … configured to be coupled to a differential input of a second external filter … configured to be coupled to a differential output of said second external filter" is an intended use language that does not structurally or patentably distinguish the claimed invention from the structure as disclosed by Hazama et al. Since the bonding pads of Hazama et al. are capable of performing the intended use, Hazama et al. fully meets this limitation.

Regarding claim 27, Hazama et al. discloses in e.g., Fig. 9B the integrated circuit comprises a quad flat package (since the package of Hazama et al. has four sides and flat, the Hazama et al. fully meets this limitation.).

Regarding claim 29, Hazama et al. discloses in e.g., Fig. 9B each of said first and second external filters comprising a surface acoustic wave (SAW) filter (column 4, lines 60 – 63).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 4, 8, 10 – 14, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hikita et al.

Regarding claims 4 and 11, while Hikita et al. discloses the use of the first (claim 4 and claim 11) and second (claim 11) pluralities of intervening terminals, Hikita et al. does not disclose the specific number of the first and second pluralities of intervening terminals. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to

determine the first and second pluralities of intervening terminals being twelve terminals, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 8 and 25, while Hikita et al. discloses the use of the semiconductor substrate and the integrated circuit package, Hikita et al. does not disclose third and fourth pair of bonding pads in the semiconductor substrate and third and fourth terminal pairs in the integrated circuit package. It would have been obvious to one having ordinary skill in the art at the time when the invention was made to duplicate the first and second pair of bonding pads onto a portion of a bigger semiconductor substrate to have the third and fourth pairs of bonding pads, also duplicating the first and second terminal pairs to have third and fourth terminal pairs in the integrated circuit package, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. St. Regis Paper Co. v. Bemis Co., 193 USPQ 8.

Regarding claim 10, Hikita et al., as modified, discloses said first and second terminal pairs being located along a first side of said integrated circuit package (1) and separated by a first plurality of intervening terminals and said third and fourth terminal pairs being located along a second side of said integrated circuit package and separated by a second plurality of intervening terminals.

Regarding claim 12, the limitation "said first and second pluralities of intervening terminals comprises at least one power supply terminal" is an intended use language that does not structurally or patentably distinguish the claimed invention from the structure as disclosed by Hikita et al. Furthermore, since any one of the first and second pluralities of intervening

terminals is capable of performing as a power supply terminal, Hikita et al. fully meets this limitation.

Regarding claim 13, Hikita et al., as modified, discloses first and second terminals of each of said first, second, third, and fourth terminal pairs being adjacent to one another.

Regarding claim 14, Hikita et al., as modified, discloses said first and second terminal pairs being located at opposite ends of said first side of said integrated circuit package and said third and fourth terminal pairs being located at opposite ends of said second side of said integrated circuit package.

Regarding claim 24, while Hikita et al. discloses the use of the thin quad flat package (TQFP), Hikita et al. does not disclose the specific number of the terminals having 64-lead TQFP. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to determine the thin quad flat package (TQFP) having 64-leads, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980)

10. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dreifus et al. in view of Hayashi (U. S. Pat. No. 6,329,715).

While Dreifus et al. discloses the use of the first, second, third and fourth bonding pads, Dreifus et al. does not disclose fifth, sixth, seventh, and eighth bonding pads. Hayashi teaches in e.g., Fig. 1 a semiconductor substrate (1; column 7, lines 41 – 50) comprising fifth (301), sixth (302), seventh (303), and eighth (304) bonding pads respectively located in said first, second, third, and fourth quadrants (see e.g., Fig. 1) and forming complementary signal pairs with signals

conducted on said first (32), second (311), third (312), and fourth (33) bonding pads, respectively (see e.g., Fig. 1 and column 7, lines 53 – 56). It would have been obvious to one of ordinary skill in the art at the time when the invention was made to apply the fifth, sixth, seventh, and eighth bonding pads of Hayashi onto the semiconductor substrate of Dreifus et al. as taught by Hayashi to provide ground pads for grounding (column 8, lines 47 and 48).

11. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hazama et al.

While Hazama et al. discloses the use of the terminals, Hazama et al. does not disclose the number of the terminal being sixty four and assignment of pin numbers to the terminals. It would have been obvious to one having ordinary skill in the art at the time when the invention was made to determine the terminals being sixty four and to assign pin numbers to the terminals, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art for the purpose of defining and identifying which operation each terminal would perform within the integrated circuit. Furthermore, see In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) for the optimum value.

Response to Arguments

12. Applicant's arguments filed on December 27, 2007 have been fully considered but they are either moot in light of the new grounds of rejection or are not persuasive.

On page 10, applicant argues "Hikita fails to contemplate an external filter, a stopband attenuation of an external filter, an input-to-output isolation attenuation between terminal pairs, how such input-to-output isolation attenuation is affected by distance, or a predetermined

distance between the terminal pairs to achieve any particular input-to-output isolation attenuation in any manner, so Hikita necessarily fails to disclose or even suggest that an integrated circuit having terminal pairs configured to be coupled to an external filter via terminal pairs has those terminal pairs separated by a predetermined distance sufficient to maintain an input-to-output isolation attenuation therebetween of not less than the stopband attenuation of an external filter as provided by claim 1." This argument is not persuasive. As explained in the previous paragraphs, the metes and bounds of the term "first and second stopband attenuations" in the claims are unclear. Furthermore, Hikita discloses the stopband attenuation of an external filter (see paragraph six of this Office action) and Hikita also discloses first and second terminal pairs of an integrated circuit are separated by a predetermined distance sufficient to maintain an input-to-output isolation attenuation therebetween that is not less than a stopband attenuation of an external filter as provided by claim 1 (see paragraph six of this Office action for detail). In other words, since the amended claim 1 does not explicitly set forth the number of the stopband attenuation or a designated frequency or range of frequencies of the filter or the range of the pass band, hence any minimum numbers or amounts of **attenuation** filters of Hikita will exhibit at a designated frequency or range of frequencies, which lie outside the pass band read as the first and second stopband attenuations. Since Hikita discloses all structural limitations (i.e., external filters and terminal pairs that are separated by a predetermined distance), hence Hikita fully meets a stopband attenuation of an external filter, an input-to-output isolation attenuation between terminal pairs, and results or relationships between the terminal pairs and the input-to-output isolation attenuation as set forth in newly amended claim 1.

For the arguments of claims 15, 21 and 26, the arguments are not persuasive as same reasons as in the above paragraphs (see the paragraphs 6 – 12 of this Office action for the detail).

For the above reasons, the rejection is maintained.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRIS C. CHU whose telephone number is (571)272-1724. The examiner can normally be reached on 11:30 - 8:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Parker can be reached on 571-272-2298. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Tuesday, February 26, 2008